

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Reissue Applicant: Clarence J. Link
Original Patent Number: 5,975,162
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Title: LIQUID DELIVERY VEHICLE WITH REMOTE CONTROL
SYSTEM

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Box REISSUE
Washington, D. C. 20231

SIR:

Section 1. Preliminary Statements

Applicant submits herewith patents, publications or other information, of which he is aware, which he believes may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this Information Disclosure Statement shall not be construed as a representation that a search has been made, an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this Information Disclosure Statement shall not be construed as an admission against interest in any manner.

Section 2. Form PTO-1449 (Modified)

A Form PTO-1449 (Modified) listing the references is filed concurrently herewith.

**Section 3. Statement as to Information Not Found in Patents or Publications
(Information Not Listed in Form PTO-1449)**

There are many applications for the transportation of liquids by a ground vehicle for delivery to a storage location. The design and construction of such vehicles, and the liquid delivery systems on those vehicles, vary depending upon the type of liquid being transported and delivered. In many cases, rules and regulations, both state and federal, such as United States Department of Transportation regulations, apply to the vehicles and to the delivery of liquids therefrom.

Volatile and flammable liquids, such as liquefied petroleum gases (LP gas or LPG), require very specialized equipment and careful handling. LPG, such as butane and propane, must be maintained under pressure at ambient temperatures to keep them in a liquid state. The liquids are extremely volatile; they will blow unless maintained under pressure. For example, propane boils at -44° F., and butane boils at +31° F. That is, butane and propane exist only in a gaseous state at atmospheric pressure in most ambient temperatures. In order to keep liquefied petroleum gases in a pressurized, liquid state, they must be stored in pressure vessels capable of withstanding internal pressures greater than atmospheric pressure.

Delivery vehicles for transporting and delivering liquefied petroleum gases must therefore have a pressurized tank or vessel thereon to hold the LP gas in a liquid state, and when the LP gas is delivered, it must be transferred into a similar pressurized storage tank or vessel. All of the interconnecting equipment and piping must be designed to withstand these high internal pressures.

LP gas delivery vehicles are well known in the art, and are frequently used to deliver liquefied petroleum gas to storage vessels, particularly in rural areas. LP gases are flammable, and thus useful as fuels, and typically delivery vehicles are used to delivery the LP gas to

residential storage tanks and also to larger commercial storage vessels from which the LP gas may be further distributed.

In a typical LP gas delivery cycle, the driver/operator parks the vehicle at some distance spaced from the vessel or tank to be filled. It may be possible to park the vehicle immediately adjacent to the storage tank, but in most cases, this is not possible. Regardless of the distance, however, the general procedure for filling the storage tank is the same.

After parking the vehicle, the operator chocks the wheel so that unintended movement of the vehicle is prevented, after which the actual delivery cycle may be carried out.

These delivery vehicles typically have a flow meter, and the operator inserts a ticket into the meter which records the transaction so that the customer can be billed the appropriate amount for the volume of liquid delivery to the customer's storage tank. The operator then takes or "acquires" a delivery hose attached to the vehicle and extends the hose from the vehicle to the storage tank. A hose valve is disposed on the end of the hose along with a coupling. The coupling is attached to a mating fitting on the tank, and the hose valve is opened. The operator then returns to the delivery truck.

Back at the truck, the operator actuates control levers to open an internal flow valve on the tank which allows fluid communication between the delivery tank and a liquid transferring means, such as a pump. The operator then engages the clutch on the vehicle, assuming the vehicle has a manual transmission, and while the clutch is disengaged, engages a power takeoff. For vehicles with automatic transmissions, a control solenoid on the power takeoff is actuated. The power takeoff is connected to a shaft of the pump. Once the power takeoff is engaged, the clutch is reengaged to allowed power from the engine to drive the pump through the power takeoff.

The operator then returns to the storage tank and observes the liquid fuel level on a liquid level gauge at the tank. Just before the fluid level reaches the maximum allowable amount, the driver again returns to the truck from the storage tank and stops the pump. This procedure includes disengaging the clutch and disengaging the power takeoff. The internal flow valve in the delivery tank can then be closed.

The operator again returns to the storage tank, closes the hose valve, and disconnects the hose from the storage tank. The hose is then rewound onto its reel. At this point, the vehicle can be driven to another location for filling another storage tank.

Section 4. Copies Of Listed Information Items Accompanying This Statement

Legible copies of all items listed in Form PTO-1449 (Modified) accompany this Information Disclosure Statement.

Section 5. Explanation Of Listed Information Items

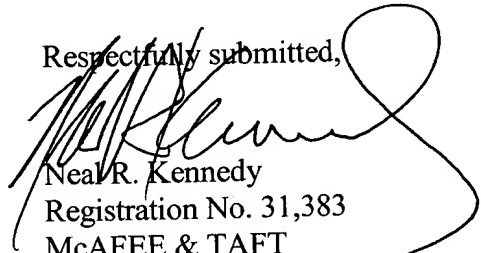
All of the items listed published by Automatic Switch Co. (ASCO) relate to solenoid valves of the type contemplated for valve 105, 106 and 107 shown in the present invention. In particular, ASCO Catalog No. 8320G182 is acceptable, although other ASCO valves and similar valves would be suitable. The booklet from Control Chief shows controllers of the type contemplated for remote controller 170 in the application.

The use of solenoid valves and the use of a remote controller is not new, but Applicant is unaware of the use of such equipment in a liquid delivery vehicle with remote system as in the present invention.

Section 6. Identification Of Person Making This Information Disclosure Statement

The person making this statement is the practitioner who signs below on the basis of information supplied by the inventor.

Respectfully submitted,



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